Ballfields Parcels at DoDHF Novato, CA
Data Validation Reports
LDC# 13575

Diesel Range Organics & Residual Range Organics

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 14, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502497

Sample Identification

TO63-R2-SB04-0-0.5	TO63-R5-SB03-0-0.5MS
TO63-R2-SB04-3-4	TO63-R5-SB03-0-0.5MSD
TO63-R2-SB01-0-0.5	
TO63-R2-SB01-0-0.5 Dup	
TO63-R2-SB01-1-2	
TO63-R1-SB04-0-0.5	
TO63-R1-SB04-4-5	
TO63-R1-SB01-0-0.5	
TO63-R1-SB03-0-0.5	
TO63-R1-SB03-4-5	
TO63-R4-SB04-0-0.5	
TO63-R4-SB04-4-5	
TO63-R5-SB04-0-0.5	
TO63-R5-SB04-5-6	
TO63-R5-SB02-0-0.5	
TO63-R5-SB02-3-4	
TO63-R5-SB01-0-0.5	
TO63-R5-SB03-0-0.5	
TO63-R2-SB03-0-0.5	
TO63-R2-SB02-0-0.5	

Introduction

This data review covers 22 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound	Concentration	Associated Samples
KWG0506138-4	4/16/05	Residual range organics	6.4 mg/Kg	All samples in SDG K2502497

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
TO63-R2-SB04-0-0.5	Residual range organics	9.3 mg/Kg	20U mg/Kg
TO63-R2-SB01-0-0.5	Residual range organics	32 mg/Kg	32U mg/Kg

Sample	Compound	Reported Concentration	Modified Final Concentration
TO63-R2-SB01-1-2	Residual range organics	24 mg/Kg	24U mg/Kg
TO63-R1-SB04-4-5	Residual range organics	21 mg/Kg	21U mg/Kg
TO63-R4-SB04-0-0.5	Residual range organics	30 mg/Kg	30U mg/Kg
TO63-R4-SB04-4-5	Residual range organics	25 mg/Kg	25U mg/Kg
TO63-R5-SB04-0-0.5	Residual range organics	11 mg/Kg	20U mg/Kg
TO63-R5-SB04-5-6	Residual range organics	32 mg/Kg	32U mg/Kg
TO63-R5-SB02-0-0.5	Residual range organics	8.4 mg/Kg	20U mg/Kg
TO63-R5-SB02-3-4	Residual range organics	15 mg/Kg	20U mg/Kg
TO63-R5-SB03-0-0.5	Residual range organics	18 mg/Kg	20U mg/Kg

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples TO63-R2-SB01-0-0.5 and TO63-R2-SB01-0-0.5 Dup and samples TO63-R1-SB01-0-0.5 and TO63-R1-SB01-0-0.5Dup (from SDG K2502499) were identified as field duplicates. No diesel range organics or residual range organics were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	TO63-R2-SB01-0-0.5	TO63-R2-SB01-0-0.5 Dup	
Residual range organics	32	44	32

Compound	Concentration (mg/Kg)		RPD
	TO63-R1-SB01-0-0.5	TO63-R1-SB01-0-0.5Dup	
Diesel range organics	24	15	46
Residual range organics	300	160	61

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Data Qualification Summary - SDG K2502497

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502497

SDG	Sample	Compound	Modified Final Concentration	A or P
K2502497	TO63-R2-SB04-0-0.5	Residual range organics	20U mg/Kg	A
K2502497	TO63-R2-SB01-0-0.5	Residual range organics	32U mg/Kg	A
K2502497	TO63-R2-SB01-1-2	Residual range organics	24U mg/Kg	A
K2502497	TO63-R1-SB04-4-5	Residual range organics	21U mg/Kg	A
K2502497	TO63-R4-SB04-0-0.5	Residual range organics	30U mg/Kg	A
K2502497	TO63-R4-SB04-4-5	Residual range organics	25U mg/Kg	A
K2502497	TO63-R5-SB04-0-0.5	Residual range organics	20U mg/Kg	A
K2502497	TO63-R5-SB04-5-6	Residual range organics	32U mg/Kg	A
K2502497	TO63-R5-SB02-0-0.5	Residual range organics	20U mg/Kg	A
K2502497	TO63-R5-SB02-3-4	Residual range organics	20U mg/Kg	A
K2502497	TO63-R5-SB03-0-0.5	Residual range organics	20U mg/Kg	A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R2-SB04-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-001	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q		MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U		13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**9.3**	J	20U	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	89	54-140	04/20/05	Acceptable
n-Triacontane	95	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R2-SB04-3-4	**Units:**	mg/Kg
Lab Code:	K2502497-002	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**7.8**	J	12	5.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**45**	Z	19	5.6	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	87	54-140	04/20/05	Acceptable
n-Triacontane	79	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R2-SB01-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-003	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q		MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U		12	5.3	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**32**	Z	u	19	5.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	84	54-140	04/20/05	Acceptable
n-Triacontane	88	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R2-SB01-0-0.5 DUP	**Units:**	mg/Kg
Lab Code:	K2502497-004	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	12	4.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**44**	Z	19	4.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	91	54-140	04/20/05	Acceptable
n-Triacontane	82	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Soil

Service Request: K2502497
Date Collected: 04/06/2005
Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R2-SB01-1-2
Lab Code: K2502497-005

Extraction Method: EPA 3550B
Analysis Method: 8015M

Units: mg/Kg
Basis: Dry

Level: Low

Analyte Name	Result	Q		MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U		13	5.3	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**24**	Z	U	20	5.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	90	54-140	04/20/05	Acceptable
n-Triacontane	80	50-150	04/20/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R1-SB04-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-006	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	7.7	J	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	60	Z	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	96	54-140	04/20/05	Acceptable
n-Triacontane	87	50-150	04/20/05	Acceptable

4/7/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R1-SB04-4-5	**Units:**	mg/Kg
Lab Code:	K2502497-007	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	5.8	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**21**	Z u	20	5.5	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	85	54-140	04/20/05	Acceptable
n-Triacontane	74	50-150	04/20/05	Acceptable

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R1-SB01-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-008	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**24**	H	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**300**	O	20	3.6	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	93	54-140	04/20/05	Acceptable
n-Triacontane	101	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R1-SB03-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-009	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**12**	J	13	4.2	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**140**	Z	20	4.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	95	54-140	04/20/05	Acceptable
n-Triacontane	103	50-150	04/20/05	Acceptable

6/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R1-SB03-4-5	**Units:**	mg/Kg
Lab Code:	K2502497-010	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	12	5.4	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**45**	Z	19	5.0	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	83	54-140	04/20/05	Acceptable
n-Triacontane	86	50-150	04/20/05	Acceptable

6/7/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Soil

Service Request: K2502497
Date Collected: 04/06/2005
Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R4-SB04-0-0.5
Lab Code: K2502497-011

Extraction Method: EPA 3550B
Analysis Method: 8015M

Units: mg/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**30**	Z	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	88	54-140	04/20/05	Acceptable
n-Triacontane	94	50-150	04/20/05	Acceptable

6/7/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Soil

Service Request: K2502497
Date Collected: 04/06/2005
Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R4-SB04-4-5
Lab Code: K2502497-012

Extraction Method: EPA 3550B
Analysis Method: 8015M

Units: mg/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	5.5	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	**25**	Z U	20	5.2	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	77	54-140	04/21/05	Acceptable
n-Triacontane	85	50-150	04/21/05	Acceptable

4/27/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R5-SB04-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-013	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**11**	J 20U	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	91	54-140	04/20/05	Acceptable
n-Triacontane	99	50-150	04/20/05	Acceptable

4/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R5-SB04-5-6	**Units:**	mg/Kg
Lab Code:	K2502497-014	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	5.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**32**	Z U	20	5.5	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	82	54-140	04/20/05	Acceptable
n-Triacontane	74	50-150	04/20/05	Acceptable

4/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R5-SB02-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502497-015	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**8.4**	J 20U	20	3.7	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	93	54-140	04/20/05	Acceptable
n-Triacontane	101	50-150	04/20/05	Acceptable

4/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R5-SB02-3-4	**Units:**	mg/Kg
Lab Code:	K2502497-016	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q		MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U		13	5.9	1	04/16/05	04/20/05	KWG0506138	
Residual Range Organics (RRO)	**15**	J	204	20	5.5	1	04/16/05	04/20/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	74	54-140	04/20/05	Acceptable
n-Triacontane	74	50-150	04/20/05	Acceptable

4/17/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Soil

Service Request: K2502497
Date Collected: 04/06/2005
Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R5-SB01-0.0.5
Lab Code: K2502497-017

Extraction Method: EPA 3550B
Analysis Method: 8015M

Units: mg/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	13	J	13	4.3	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	110	Z	20	4.0	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	103	54-140	04/21/05	Acceptable
n-Triacontane	97	50-150	04/21/05	Acceptable

4/6/7/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R5-SB03-0.0.5	**Units:**	mg/Kg
Lab Code:	K2502497-018	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q		MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U		13	3.7	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	**18**	J	20U	20	3.5	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	90	54-140	04/21/05	Acceptable
n-Triacontane	97	50-150	04/21/05	Acceptable

4/27/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502497
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R2-SB03-0.0.5	**Units:**	mg/Kg
Lab Code:	K2502497-019	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	12	5.3	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	**33**	Z	18	5.0	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	90	54-140	04/21/05	Acceptable
n-Triacontane	82	50-150	04/21/05	Acceptable

4/27/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Battelle Memorial Institute
Project: Novato Ballfields/G486063
Sample Matrix: Soil

Service Request: K2502497
Date Collected: 04/06/2005
Date Received: 04/07/2005

Diesel and Residual Range Organics

Sample Name: TO63-R2-SB02-0.0.5
Lab Code: K2502497-020

Extraction Method: EPA 3550B
Analysis Method: 8015M

Units: mg/Kg
Basis: Dry
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	12	5.4	1	04/16/05	04/21/05	KWG0506138	
Residual Range Organics (RRO)	**45**	Z	18	5.1	1	04/16/05	04/21/05	KWG0506138	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	87	54-140	04/21/05	Acceptable
n-Triacontane	87	50-150	04/21/05	Acceptable

6/17/05

Comments:

LDC #: 13575A8
SDG #: K2502497
Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 6/13/05
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Diesel Range Organics & Residual Range Organics (EPA SW 846 Method 8015)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/6/05
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	7008 ICV
III.	Blanks	SW	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	LCS
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	D = 3+4, 8+T063R1-SB01-0-0.5DUP (KX502499
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:
MS 01-5

1	TO63-R2-SB04-0-0.5	11	TO63-R4-SB04-0-0.5	21	TO63-R5-SB03-0-0.5MS	31	KWG0506138-4
2	TO63-R2-SB04-3-4	12	TO63-R4-SB04-4-5	22	TO63-R5-SB03-0-0.5MSD	32	
3	TO63-R2-SB01-0-0.5	13	TO63-R5-SB04-0-0.5	23		33	
4	TO63-R2-SB01-0-0.5 Dup	14	TO63-R5-SB04-5-6	24		34	
5	TO63-R2-SB01-1-2	15	TO63-R5-SB02-0-0.5	25		35	
6	TO63-R1-SB04-0-0.5	16	TO63-R5-SB02-3-4	26		36	
7	TO63-R1-SB04-4-5	17	TO63-R5-SB01-0-0.5	27		37	
8	TO63-R1-SB01-0-0.5	18	TO63-R5-SB03-0-0.5	28		38	
9	TO63-R1-SB03-0-0.5	19	TO63-R2-SB03-0-0.5	29		39	
10	TO63-R1-SB03-4-5	20	TO63-R2-SB02-0-0.5	30		40	

Notes: _____

LDC #: 13558
SDG #: K250249T

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: a
2nd Reviewer: [illegible]

METHOD: ✓ GC ___ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all samples associated with a given method blank?
Y N N/A Was a method blank performed for each matrix and whenever a sample extraction procedure was performed?
Y N N/A Was a method blank performed with each extraction batch?
Y N N/A Were any contaminants found in the method blanks? If yes, please see findings below.

Level IV/D Only

Y N N/A (Gasoline and aromatics only)Was a method blank analyzed with each 24 hour batch?
Y N N/A Was a method blank analyzed for each analytical / extraction batch of ≤20 samples?

Blank extraction date: 4/6/25 **Blank analysis date:** 4/20/25 **Associated samples:** ALL
Conc. units: ug/kg

Compound	Blank ID	Sample Identification													
KWG0506138-4		1	2	3	4	5	6	7	8	9	10	11	12	13	14
RRO	6.4	9.3 J 20U	(45)	32 J U	(44)	24 J U	(60)	21 J U	(300)	(140)	(45)	30 J U	25 J U	11 J 20U	32 J U

Blank extraction date: [illegible] **Blank analysis date:** ___ **Associated samples:** ALL
Conc. units: ug/kg

Compound	Blank ID	Sample Identification													
KWG0506138-4		15	16	17	18	19	20								
RRO	6.4	8.4 J 20U	15 J 20U	(110)	18 J 20U	(33)	(45)								

ALL CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 135758
SDG #: K2502497

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 9
2nd reviewer: 9

METHOD: ✓ GC ___ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/Kg)		%RPD	Qualification
	3	4	Limit ≤____	Parent only / All Samples
RRO	32	44	32	

Compound	Concentration (ug/Kg)		%RPD	Qualification
	8	TO63-R1-SB01-0-0.5DUP	Limit ≤____	Parent only / All Samples
DRO	24	15	46	
RRO	300	160	61	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 15, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502499

Sample Identification

TO63-R1-SB02-0-0.5
TO63-R1-SB01-0-0.5Dup

Introduction

This data review covers 2 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

Samples TO63-R1-SB01-0-0.5Dup and TO63-R1-SB01-0-0.5 (from SDG K2502497) were identified as field duplicates. No diesel range organics or residual range organics were detected in any of the samples with the following exceptions:

Compound	Concentration (mg/Kg)		RPD
	TO63-R1-SB01-0-0.5Dup	TO63-R1-SB01-0-0.5	
Diesel range organics	15	24	46
Residual range organics	160	300	61

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Data Qualification Summary - SDG K2502499

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502499

No Sample Data Qualified in this SDG

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502499
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	T063-R1-SB02-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502499-011	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**12**	J	13	4.0	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**110**	Z	20	3.8	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	85	54-140	04/19/05	Acceptable
n-Triacontane	93	50-150	04/19/05	Acceptable

Comments:

6/17/05

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502499
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	T063-R1-SB01-0-0.5 DUP	**Units:**	mg/Kg
Lab Code:	K2502499-012	**Basis:**	Dry
		Level:	Low
Extraction Method:	EPA 3550B		
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**15**	Z	14	4.3	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**160**	Z	22	4.1	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	86	54-140	04/19/05	Acceptable
n-Triacontane	105	50-150	04/19/05	Acceptable

Comments:

6/1/05

LDC #: 13575B8
SDG #: K2502499
Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 6/13/05
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC Diesel Range Organics & Residual Range Organics (EPA SW 846 Method 8015)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/6/05
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	%D + ICV
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	TO63-R4-SB01-0-0.5 (K2502505)
IVc.	Laboratory control samples	A	LCS
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	SW	~~D = 1 + 2~~ D = 2 + TO63-R1-SB01-0-0.5 (K250249[illegible])
X.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected
R = Rinsate
FB = Field blank

D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

1	TO63-R1-SB02-0-0.5 S	11		21		31	
2	TO63-R1-SB01-0-0.5Dup ✓	12		22		32	
3		13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

LDC #: 13553B
SDG #: K1502499

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: a
2nd reviewer: a

METHOD: ✓ GC __ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (MS/KG)		%RPD	Qualification
	D	T063-R1-SB01-0-0.5DUP	Limit ≤____	Parent only / All Samples
DRO	12	15		
RRO	110	160		

Compound	Concentration (MS/KG)		%RPD	Qualification
	2	T063-R1-SB01-0-0.5 ~~DUP~~	Limit ≤____	Parent only / All Samples
DRO	15	24	46	
RRO	160	300	61	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Ballfields Parcels at DoDHF Novato, CA

Collection Date: April 6, 2005

LDC Report Date: June 14, 2005

Matrix: Soil

Parameters: Diesel Range Organics & Residual Range Organics

Validation Level: NFESC Level III & IV

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K2502505

Sample Identification

TO63-R3-SB04-0-0.5
TO63-R3-SB04-2-3**
TO63-R3-SB01-0-0.5
TO63-R3-SB01-4-5
TO63-R3-SB02-0-0.5
TO63-R3-SB03-0-0.5**
TO63-R4-SB03-0-0.5
TO63-R4-SB03-3-4
TO63-R4-SB02-0-0.5
TO63-R4-SB01-0-0.5**
TO63-R4-SB01-0-0.5MS
TO63-R4-SB01-0-0.5MSD

**Indicates sample underwent NFESC Level IV review

Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 for Diesel Range Organics and Residual Range Organics.

The review follows the Final Sampling and Analysis Plan for Preliminary Assessment/Site Investigation of Ballfields Parcels at DoDHF Novato, California, (March 23, 2005) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the methods stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified a P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent NFESC Level IV review. NFESC Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by NFESC Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0% .

b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No diesel range organic or residual range organic contaminants were found in the method blanks.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Data Qualification Summary - SDG K2502505

No Sample Data Qualified in this SDG

Ballfields Parcels at DoDHF Novato, CA
Diesel Range Organics & Residual Range Organics - Laboratory Blank Data Qualification Summary - SDG K2502505

No Sample Data Qualified in this SDG

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB04-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-001	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.9	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**25**	Z	20	3.7	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	83	54-140	04/19/05	Acceptable
n-Triacontane	98	50-150	04/19/05	Acceptable

6/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB04-2-3	**Units:**	mg/Kg
Lab Code:	K2502505-002	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	5.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**66**	Z	20	5.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	72	54-140	04/19/05	Acceptable
n-Triacontane	75	50-150	04/19/05	Acceptable

6/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB01-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-003	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	4.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**39**	Z	20	4.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	78	54-140	04/19/05	Acceptable
n-Triacontane	89	50-150	04/19/05	Acceptable

6/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB01-4-5	**Units:**	mg/Kg
Lab Code:	K2502505-004	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.9	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**25**	Z	20	3.7	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	81	54-140	04/19/05	Acceptable
n-Triacontane	96	50-150	04/19/05	Acceptable

6/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB02-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-005	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**7.8**	J	13	3.9	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**86**	Z	20	3.7	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	91	54-140	04/19/05	Acceptable
n-Triacontane	111	50-150	04/19/05	Acceptable

4/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R3-SB03-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-006	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	4.1	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**37**	Z	20	3.9	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	87	54-140	04/19/05	Acceptable
n-Triacontane	102	50-150	04/19/05	Acceptable

6/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R4-SB03-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-007	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**33**	H	13	3.7	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**250**	O	20	3.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	80	54-140	04/19/05	Acceptable
n-Triacontane	96	50-150	04/19/05	Acceptable

6/14/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R4-SB03-3-4	**Units:**	mg/Kg
Lab Code:	K2502505-008	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	12	5.4	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**25**	Z	20	5.0	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	79	54-140	04/19/05	Acceptable
n-Triacontane	91	50-150	04/19/05	Acceptable

4/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R4-SB02-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-009	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**7.0**	J	13	3.8	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**71**	Z	20	3.6	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	89	54-140	04/19/05	Acceptable
n-Triacontane	108	50-150	04/19/05	Acceptable

4/19/05

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Battelle Memorial Institute	**Service Request:**	K2502505
Project:	Novato Ballfields/G486063	**Date Collected:**	04/06/2005
Sample Matrix:	Soil	**Date Received:**	04/07/2005

Diesel and Residual Range Organics

Sample Name:	TO63-R4-SB01-0-0.5	**Units:**	mg/Kg
Lab Code:	K2502505-010	**Basis:**	Dry
Extraction Method:	EPA 3550B	**Level:**	Low
Analysis Method:	8015M		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	13	3.7	1	04/18/05	04/19/05	KWG0506162	
Residual Range Organics (RRO)	**6.9**	J	20	3.5	1	04/18/05	04/19/05	KWG0506162	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	80	54-140	04/19/05	Acceptable
n-Triacontane	94	50-150	04/19/05	Acceptable

6/19/05

Comments:

LDC #: 13575C8

SDG #: K2502505

Laboratory: Columbia Analytical Services

VALIDATION COMPLETENESS WORKSHEET

Level III/IV

Date: 6/13/05

Page: 1 of 1

Reviewer: CV

2nd Reviewer: CV

METHOD: GC Diesel Range Organics & Residual Range Organics (EPA SW 846 Method 8015)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 4/6/05
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	70 & 1 cv
III.	Blanks	A	
IVa.	Surrogate recovery	A	
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	LCS
V.	Target compound identification	A	Not reviewed for Level III validation.
VI.	Compound Quantitation and CRQLs	A	Not reviewed for Level III validation.
VII.	System Performance	A	Not reviewed for Level III validation.
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

All Soils

1	TO63-R3-SB04-0-0.5	11	TO63-R4-SB01-0-0.5MS	21		31	
2	TO63-R3-SB04-2-3**	12	TO63-R4-SB01-0-0.5MSD	22		32	
3	TO63-R3-SB01-0-0.5	13	KWF0506162-4	23		33	
4	TO63-R3-SB01-4-5	14		24		34	
5	TO63-R3-SB02-0-0.5	15		25		35	
6	TO63-R3-SB03-0-0.5**	16		26		36	
7	TO63-R4-SB03-0-0.5	17		27		37	
8	TO63-R4-SB03-3-4	18		28		38	
9	TO63-R4-SB02-0-0.5	19		29		39	
10	TO63-R4-SB01-0-0.5**	20		30		40	

Notes: _____

LDC #: 13575C8
SDG #: K2502505

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: 9

Method: ✓ GC _____ HPLC

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were the RT windows properly established?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or %R	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ 15%.0 or percent recoveries 85-115%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓	✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			

LDC #: 12575C8
SDG #: K2502505

VALIDATION FINDINGS CHECKLIST

Reviewer: Q
2nd Reviewer: JA

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds idetected in the field duplicates?			✓	
XV. Field blanks				
Were field blanks identified in this SDG?		✓		
Were target compounds detected in the field blanks?			✓	

LDC #: 135758
SDG #: K50250S

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: Q
2nd Reviewer: 8

METHOD: GC ✓ HPLC _____

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (1000std)	Recalculated CF (1000std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL	4/18/15	ORO	31200	31200	33900	33900	4.1	4.1
2									
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13975C8
SDG #: K250285

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: 9
2nd Reviewer: 9

METHOD: GC ✓ HPLC ____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	04187078	4/19/05	DRO	33900	31800	31800	6	6
2	04187104	4/19/05	DRO	33900	32300	32300	5	5
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 135758
SDG #: K02505

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: 9
2nd reviewer: 9

METHOD: ✓ GC ___ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 2

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
o-Terphenyl	RTX-1	50	35.88	72	72	0
n-Triacontane	↓	↓	37.69	75	75	0

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

Sample ID: _____

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference

LDC #: 13675C8
SDG #: K050205

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 9
2nd Reviewer: 9

METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

Where SSC = Spiked sample concentration; SA = Spike added; MS = Matrix spike; SC = Sample concentration; MSD = Matrix spike duplicate

MS/MSD samples: 11/12

Compound	Spike Added (MS/SD)		Sample Conc. (MS/SD)	Spike Sample Concentration (MS/SD)		Matrix spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	---	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)	313	313	ND	305	299	97	97	96	96	2	2
Diesel (8015)											
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 18575C8
SDG #: K2502505

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

____METHOD: ✓ GC __HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

%Recovery = 100 * (SSC - SC)/SA

Where SSC = Spiked sample concentration
SA = Spike added
SC = Sample concentration
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample duplicate

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

LCS/LCSD samples: KWG0506162-3

Compound	Spike Added (mg/kg)		Sample Conc. (mg/kg)	Spike Sample Concentration (mg/kg)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	---	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline (8015)											
Diesel (8015)	320	NA	-	317	NA	99	99				
Benzene (8021B)											
Methane (RSK-175)											
2,4-D (8151)											
Dinoseb (8151)											
Naphthalene (8310)											
Anthracene (8310)											
HMX (8330)											
2,4,6-Trinitrotoluene (8330)											

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 13575C8
SDG #: K90285

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: 2

METHOD: ✓ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound In the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. 6 Compound Name RRO

Concentration = $\frac{(2387181)(4)(1)}{(25700)(12.10)(0.838)}$

= 36.6 mg/kg

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

SAMPCALew.wpd